

Response to Office Action Mailed November 26, 2010

Serial No. 10/599,265; Filed July 9, 2008

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Amendments to the Drawings:

Attachment: Four replacement drawing sheets labeled Replacement Sheets 1 / 5, 3 / 5, 4 / 5, and 5 / 5 are attached to the end of this document.

REMARKS

Claim 1 has been amended to incorporate the subject matter of claim 5, which has been cancelled. Claims 2, 3, 6-9, 12, 13, and 15 have been amended. New claims 18-20 have been added. Claims 1-4 and 6-20 are pending and presented for review. Favorable reconsideration and allowance are requested in light of the remarks which follow.

1. Objection to the Drawings

The Examiner objects to the drawings for not clearly showing the mechanical configuration of claim 1 and for having excessive shading in FIGS. 3-7. Applicants amended FIG. 1, as shown in REPLACEMENT SHEET 1 / 5 to more clearly show an exemplary mechanical configuration. Such amendment finds support in, e.g., the claims and elsewhere in the application as filed, whereby no new matter has been added. REPLACEMENT SHEETS 3 / 5, 4 / 5, and 5 / 5 show FIGS. 3-7 with less shading. Such amendments resolve minor informalities, whereby no new matter has been presented.

2. Amendments to the Specification

Applicants amended the specification to add numerical labels that correspond to the changes made in the amended FIG. 1, whereby no new matter has been added.

3. Clarifying Amendments to the Claims

Claims 2, 3, 6-9, 12, 13, and 15 have been amended to correct informalities noted therein upon a review thereof. Most notably, 1) the claims have been amended, where appropriate, so as to resolve lack of antecedence in claim 1 for two or more excitors, and 2) each of claims 2 and 6-9 has been amended to depend from claim 2 in order to provide explicit antecedence for the recited imbalance shafts.

4. Prior Art Rejections

The Examiner rejects claims 1, 2, 4, 9, 11, and 17 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 3,923,412 to Linz (herein “the Linz patent”). Claims 3, 5-7, 10, and 12-16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the Linz patent in view of Official Notice taken by the Examiner. Applicants respectfully assert that the

amendments herein obviate all such rejections, as is discussed below. Therefore, reconsideration is in order and is respectfully requested.

a. Recapitulation of the Invention*

The invention relates to soil-compacting devices, and particularly to a self-propelled vibration plate-type soil compacting device. Prior art self-propelled soil-compacting devices required complex vibration excitors with numerous adjustment components and that each perform three functions. Such known compacting devices have *vibration excitors that each provide (i) propelling forces, (ii) yaw moments for steering, and (iii) compacting forces.*

In the present invention, a soil-compacting device is provided that includes a common upper mass having a drive. At least two lower masses are coupled to the upper mass and are capable of oscillatory movement relative to the upper mass. Each of the lower masses has a (i) soil contact plate, and (ii) at least one vibration exciter that is allocated to the respective soil contact plate. Each vibration exciter of the at least two lower masses is driven by the drive such that a resultant propulsive force in a direction of propulsion can be produced at least by one of the vibration excitors of the at least two lower masses. Therefore, the self-propelled vibration plate-type soil-compacting device has multiple lower masses and multiple soil contact plates, each of which has an associated vibration exciter and at least one of which can produce a resultant propulsive force. This eliminates the need for each of the vibration excitors to perform all three (propelling, steering, compacting) functions of a self-propelled vibration plate-type soil-compacting device, which may simplify the overall design of the compacting device.

b. Obviation and Traversal of Rejections

Applicants respectfully assert that the amendment to claim 1 obviates the rejections since the Linz patent teaches away from the subject matter of amended independent claim 1.

Applicants further point out that claim 1 has been amended to include the subject matter of former claim 5. Noting that the Examiner rejected former claim 5 as being unpatentable over the

* This Section 3(a) is presented for background purposes so the Examiner may understand the state of the art and, in general terms, the Applicants' contribution thereto. It is not intended to particularly address the obviation or traversal of any particular rejection. That task instead is performed in Section 3(b) below.

Linz patent in view of the Official Notice, applicants traverse such rejection while explaining below how the Linz patent teaches strongly away from the Examiner's proposed modification of the Linz patent in light of the Official Notice.

Independent claim 1, as amended, recites a soil-compacting device that is provided that includes a common upper mass having a drive and at least two lower masses that are coupled to the upper mass and that are capable of oscillatory movement relative to the upper mass. Each of the lower masses has a (i) soil contact plate, and (ii) at least one vibration exciter that is allocated to the respective soil contact plate. Each vibration exciter of the at least two lower masses is driven by the drive such that a resultant propulsive force in a direction of propulsion can be produced at least by one of the vibration exciters of the at least two lower masses.

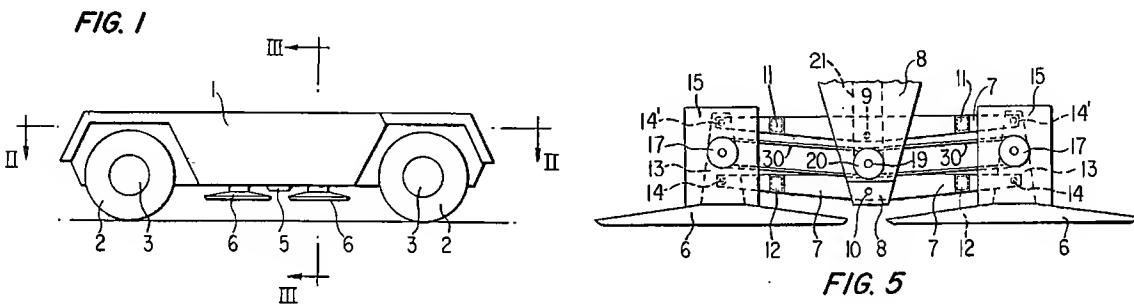
The Linz patent does not disclose a self-propelled vibration-plate soil-compacting device, in any regard. Instead, the Linz patent discloses a *vehicle mounted rammer-compactor* with two ramming feet 6 that are carried by a chassis 1 that has tires 2 mounted to axles 3 for propelling and steering the rammer-compactor. The ramming feet 6 and their driving mechanism are configured to permit amplitude and frequency adjustments of the ramming feet 6 movement, while maintaining the vertical movement and opposite phase relationship of the ramming feet 6 with respect to each other. This ensures synchronized compacting-only (non-propulsive) movements of the ramming feet 6. For example, the ramming feet 6 are purposely synchronized in opposite phase with respect to each other, by way of a:

-- driving mechanism [that] includes *two cranks operating 180° out of phase* so that one vibrating element is engaged with the material to be compacted while the other vibrating element is raised to its highest point of travel-- (Col. 2, Lines 13-17, *emphasis added*).

The ramming feet 6 are *purposely mechanically linked to each other so that their movement with respect to each other cannot be adjusted*, so as to ensure that the ramming feet 6 maintain their 180° opposite phase relationship with respect to each other. Specifically, the ramming feet 6 are maintained in such opposite phase relationship by their connection to opposite ends of a pair of control arms 7 of a parallelogram linkage. Radius lengths of the control arm 7 levers within the linkage limit the movement of the ramming feet 6 and require the

feet 6 to travel the same distance but in opposite directions. Accordingly, the linkage restricts the ramming feet 6 to, opposite phase, movements and compacting-only forces. This configuration prevents or mitigates other movements and forces from being translated through the linkage and ramming feet 6.

FIGS. 1 and 5 of the Linz Patent



The Examiner takes Official Notice that “phase adjustment devices are common in soil compacting devices” and that “recitations of forces would be inherently met” (Office Action dated November 26, 2010, Page 3). Applicants agree that phase adjustment devices are known, but assert that they are known to one of ordinary skill in the art to the extent described in Applicants’ background at, e.g., ¶¶ [0005]-[0009]. Without admitting to the propriety of the Official Notice, and while reserving the right to traverse its application in more detail at a later time, Applicants now address the Official Notice to the extent needed to describe how the Linz patent teaches away from the Examiner’s proposed modification of the Linz patent.

As described above, the entire purpose of Linz is to improve vehicle-mounted soil compactors by providing rammer feet that are maintained in up-and-down travel and opposite phase movement synchronism so as to apply only compacting forces to the surface being compacted, regardless of adjustments made to the frequency and amplitude of the rammer feet movement (Col. 1, Lines 31-67). The Linz patent discloses that the driving mechanism which moves the ramming feet 6 must not be phase adjustable, but rather must mechanically link and maintain the ramming feet 6 in the 180° opposite phase relationship.

The Examiner’s proposed modification of the Linz patent to include a phase adjustment device in a vibration exciter to (inherently) provide a resultant propulsive force in a direction of

propulsion would impermissibly render the Linz device unsuitable for its intended purpose. Thus, contrary to the Examiner's assertion, the Linz patent cannot be modified by the Official Notice or otherwise to provide at least one of the lower masses has at least one vibration exciter allocated to a respective soil contact plate that can produce a resultant propulsive force in a direction of propulsion. The Linz patent therefore does not disclose each and every element of Applicants' novel and non-obvious claim 1, nor can the Linz patent be modified in view of the Official Notice to disclose or suggest each and every element of Applicants' novel and non-obvious claim 1, whereby it is believed to be allowable over the cited prior art.

Furthermore, the Linz patent alone or combined with the Official Notice, does not and cannot disclose or suggest each and every limitation of claim 2-4 and 6-17 whereby these claims are allowable as depending from allowable claim 1, as well as each on its own merits.

For example, claim 12 further recites that *the vibration excitors are capable of being controlled individually by the control unit*. Here again, the Linz patent *requires* the drive mechanisms to maintain opposite phase synchronization of the ramming feet 6 by mechanically linking the ramming feet 6 together so that they cannot be controlled individually.

5. New Claims and Conclusion

Applicant herein presents new claim 18 which is supported at, e.g., pages 5-6 of the (substitute) specification, the drawings, and elsewhere in the application as filed, whereby no new matter has been added. New claims 18 is largely analogous to independent claim 1(as amended to include the limitations of claim 5) and recites the "resultant propulsive force" generation feature with even greater specificity than amended claim 1. The arguments set forth above in connection with amended claim 1 therefore apply with at least as much force and effect to claim 18. New claim 18 is therefore believed to be allowable over the art cited in the Office Action dated November 26, 2010.

Claim 19 depends from claim 18 and recites an aspect, discussed e.g., at page 5 line 29 through page 1 of the as-filed substitute specification that is neither disclosed nor suggested by the cited Linz reference.

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Claim 20 depends from claim 18 and is generally commensurate in scope with claim 12, the limitations of which are neither disclosed nor suggested by Linz for the reasons discussed above.

Applicant asserts that claims 1-4 and 6-20 are in compliance with 35 U.S.C. §§ 102 and 103 and each defines patentable subject matter. A Notice of Allowance is therefore respectfully requested.

No fee is believed due with this communication. Nevertheless, should the Examiner consider any fees to be payable in conjunction with this or any future communication, the Director is authorized to direct payment of such fees, or credit any overpayment, to Deposit Account No. 50-1170.

Respectfully submitted,



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